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CLASSIFICATION

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50X1-HUM

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1.

many of the component instruments are basic scientific measuring instruments, the situation in regard to these may be indicative of the entire instrument field in the USSR. The difficulty the Soviets have in building high resistance permanent magnet-moving coil electrical meter movements is partly due either to their inability to manufacture or procure high resistance, low temperature coefficient wire in the smaller diameters, or their inability to manufacture the delicate meter movements. The first reason seems more likely.

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2. The Soviets had difficulty in producing high resistance millivoltmeters; the millivoltmeters they made had resistances no higher than 75 to 100 ohms. For 50X1-HUM instruments with higher resistance values, they had to rely on imported ones, primarily German.

3. [redacted] no rectifier-type AC instruments — all were of the iron-vane type. There was no apparent lack of oscilloscopes, yet very few vacuum tube voltmeters were in evidence. A few recording instruments were available, but most indicating instruments were millivoltmeters. These were calibrated periodically, using a potentiometer and a standard cell. The standard cells were of Soviet manufacture, of the unsaturated type, and proved very satisfactory. Various special instrument assemblies were built involving simple electronic circuits of no particular originality. Many [redacted] instrumentation problems dealt with 50X1-HUM thermocouples and thermocouple installations. There was difficulty in obtaining thermocouple wire of sufficiently high uniformity.

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